

pages, our readers may be disposed to think that the author must have achieved his purpose. On a closer inspection, however, the formidable proportions of the work become greatly diminished. We find that the actual text of the book is only some 425 pages, the remaining 515 pages being supplied by statutes, Patent rules, international regulations, voluminous forms, and an index. We have always understood that a legal text-book ought to be in form as concise, and we might almost say as condensed, as possible, consistently with the importance of the subject-matter. Mr. Edmunds does not appear, however, to pay much regard to this wholesome rule. We rarely remember to have seen a legal text-book more gratuitously padded out than the work now before us. To take one illustration, the author devotes nearly 200 pages to printing the Patent Acts 1883-1888, twice over, for what good purpose we are at a loss to understand. The notes which are appended to what we must, under the circumstances, call the first edition of the Patent Acts 1883-1888, are of considerable value, but we cannot approve the system of cross references, by means of which the author seeks to incorporate, under various sections of the Acts, passages from the preceding text. By this device, Mr. Edmunds seems to have attempted to combine in one volume two inconsistent methods of text writing—the method which constructs a book by noting the sections of an Act, and the method which, relegating the statutes to an appendix, makes the body of the text a continuous treatise. There is much to be said for each method. Mr. Lawson's admirable work on Patent practice is an excellent illustration of the first; and the now old but well-known work of Mr. Windmarch on Letters Patent is a felicitous adoption of the second. But we do not think a cross between the two can ever be satisfactory. Considering how fully Mr. Lawson's work meets the needs of practice, and how much more convenient it is in point of size than the book now before us, we think Mr. Edmunds would have done better to have devoted himself to the production of a treatise on substantive law only. A new work on Patent practice was not required by the legal profession, but a new work on substantive Patent law has long been a public desideratum; and we think the present author, with his industry and evident ability, might well have supplied that want. We are afraid, however, that that want still remains to be supplied.

Coming to what is the text of the book—Part I., Patent Law and Practice—we notice that Mr. Edmunds gives in his first three chapters an interesting historical account of the origin of English Patent law. But we are disappointed to find that the very important question of subject-matter is but scantily treated in a chapter of thirty-four pages. This in a work of nearly 1000 pages, claiming to be an exhaustive treatise, is a surprising deficiency. In this part of his book, Mr. Edmunds has, in fact, limited his space far too much, and betrayed a tendency to huddle important cases into footnotes—a tendency the more to be regretted considering the size to which the book has otherwise been allowed to grow. In his chapters on specifications and infringement, the author has been much more successful, and these show great care and considerable merit. The chapters on foreign and colonial Patent laws are interesting, but necessarily short,

and where a statement of law has to be so condensed its utility must be very doubtful. The table of cases is very complete, and it is a useful addition to the usual citations to add, as Mr. Edmunds has done, the dates of the decisions. The appendix of forms is a very full one, and the index seems to be well compiled. The immense increase in the number of patents granted by the Crown in recent years has given to this department of our law a greatly enhanced importance, and while we have not scrupled to point out what we regard as the defects of Mr. Edmunds's work, we doubt not that the book will have a large circulation amongst those whose professional duties lead them to consult works on this branch of English law.

OUR BOOK SHELF.

Lessons on Health. By Arthur Newsholme, M.D., D.Ph. (Univ. Lond.). (London: W. H. Allen and Co., 1890.)

UP to the year 1889, the Science and Art Department of South Kensington required that candidates for the examination in hygiene should at some previous time have passed the Departmental test in physiology. Since that date, however, the Science and Art authorities have decided that the hygiene paper shall contain questions on physiology, embracing the general structure of the human body, the forms, positions, and uses of the more important organs, more especially the construction and action of the circulatory and respiratory systems, and of the digestive and excretory organs; and that a separate examination in this subject shall be dispensed with. Dr. Newsholme's "Lessons on Health" is a manual designed to cover the requirements of the elementary stage of the hygiene examination under the altered regulations. Writing for elementary readers, the author wisely begins by devoting a chapter to the chemistry of the chief elements which enter into the composition of the body. The next four chapters are taken up with histology and physiology, but here we do not think the author has entered sufficiently into detail to enable beginners to grasp the full meaning of what they are reading. Our objections have special reference to the histology. For example, the author tells us that the tissues, when examined microscopically, are found to consist of cells, which, in the case of muscular and connective tissues, have become transformed into fibres; and that the original appearance of cells is best seen in the cells of connective tissue, brain, and epithelium. No explanation, however, is given as to what is meant by a cell; nor even a brief account of the appearances and structure of the other tissues of the body; so that, when the reader comes to learn such facts as that the stomach is composed of four different coats, or that there are three layers in the wall of an artery, the latter differing from a vein in possessing more elastic tissue, he cannot form any adequate idea as to the meaning of these words. Again, in the description of the skeleton, the sterno-clavicular articulation is mentioned, but no allusion is made to the joint between the clavicle and scapula; the ulna is said to articulate with the humerus, but no mention is made of the fact that the head of the radius enjoys the same privilege.

The matter in the hygiene section of the book, both in arrangement and description, is excellent, and may be cordially recommended for the purpose intended.

J. H. E. BROCK.

Practical Inorganic Chemistry. By E. J. Cox, F.C.S. (London: Percival and Co., 1890.)

THIS is a volume of 51 pages, consisting of "the necessary notes, reactions, and analytical tables constantly

required for reference" by students preparing for the elementary stage examination of the Department of Science and Art in practical inorganic chemistry. As only seven bases and four acids are included in the syllabus, and the mixtures given are soluble in water or dilute acids, the scope of the volume is very limited. The author begins by stating the possible number and character of the constituents of mixtures that come within the range of the syllabus, and then gives a list of all the substances available for the examiners to make the mixtures from. Then follow lists of reactions and tables of methods. After these is a quotation from the published description of that part of the examination that consists of questions to be answered, and as the examiners state that "the value of the answers will be greatly enhanced by neatness and clearness of sketches," the author proceeds to give "the sketches required," a series of 21 figures all duly labelled, and which presumably includes every sketch that can possibly be needed. The student is recommended to practice copying the figures until he "can draw the apparatus neatly and accurately."

Notes on Trigonometry and Logarithms. By Rev. J. M. Eustace, M.A. (London: Longmans, Green, and Co., 1890.)

THIS work is not like an ordinary text-book, but consists of a series of well-arranged notes on the elements of trigonometry and logarithms. The subject is treated so that it may be useful to beginners, and to those working it up by themselves. The book-work will be found fully worked out, and, in each chapter, examples on it are given to demonstrate the methods of solution.

Great care has been bestowed on the explanations of the various manipulations to which logarithms can be applied, and the author has reprinted some pages of the mathematical tables published by Messrs. W. and R. Chambers, giving a full explanatory account of the method of using them, which to a beginner will prove most serviceable. Two excellent chapters on solutions of triangles and heights and distances give the student a good insight into the more common problems that are generally worked out in this way.

Miscellaneous propositions and examples are dealt with in the last two chapters: in the former, such propositions as the nine-point circle, distance between centres of circumscribed and escribed circles of triangles, &c., are discussed; while in the latter we have a series of well-selected examples taken from the usual sources.

Elementary Statics. By the Rev. J. B. Lock, M.A. (London: Macmillan and Co., 1890.)

MANY are the treatises which deal with the subject of elementary statics, but few can rival in clearness the present stereotyped edition of Mr. Lock's work. The alterations that have been made have not necessitated any considerable change in the character of the book. By the addition of some fully worked out illustrated problems, and of a carefully graduated set of interesting examples for the student to solve, the author has slightly enlarged the scope of the treatise. The number of the miscellaneous examples at the end have been greatly increased by the insertion of problems that have appeared in the Cambridge examinations in the last two or three years. The subject throughout is treated in the author's best style, and the book can be cordially recommended for the use of beginners.

Die photographische Retouche in ihrem ganzen Umfange. By Wilh. Kopske. (Berlin: Robert Oppenheim, 1890.)

IN order to remove the defects incidental to photographic pictures, a process of "touching up" has to be resorted to, and the present pamphlet of 80 pages in length offers instructions in this subject, which will be found of use

by practical photographers. The amount of valuable information compressed within the compass of the little work before us is quite remarkable, and shows that the author is thoroughly familiar with this branch of his art. We can commend the book to photographic artists.

LETTERS TO THE EDITOR.

[The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts intended for this or any other part of NATURE. No notice is taken of anonymous communications.]

Photographs of Meteorological Phenomena.

AT the Leeds meeting of the British Association a Committee, consisting of Mr. G. J. Symons, F.R.S. (Chairman), Prof. Raphael Meldola, F.R.S., Mr. John Hopkinson, and myself, was appointed to report upon the application of photography to the elucidation of meteorological phenomena, and to collect and register photographs of such phenomena.

The success with which these instructions can be carried out necessarily depends in a great measure upon the voluntary co-operation of others.

Will you therefore allow us to appeal to photographers through the medium of your columns, and to ask all those who have in their possession negatives of clouds, lightning, hoar-frost, hail-stones, or any other meteorological phenomena, or of damage done by whirlwinds, tornadoes, or storms, to communicate with me?

We shall be grateful for copies of any such photographs, but shall especially welcome offers of future assistance in the shape of photographs taken in accordance with some simple instructions which will be supplied on application.

ARTHUR W. CLAYDEN.

Warleigh, Tulse Hill Park, London, S.W., November 18.

Some Habits of the Spider.

THE experiment given by Mr. Boys can be successfully made with a common table-fork. The spider will seize the handle and grapple with it in a ridiculous fashion, but it soon tires of the performance. The prongs will continue vibrating for some little time if struck smartly on a wall.

A curious habit of the spider has perhaps been recorded, but I have never seen it noted. A large, dark spider is sometimes seen in the centre of a strong and regular web. Blow the spider with a slight puff, and if it does not fall or run away, it will shake itself violently for a quarter of a minute. These oscillations are not natural, as the spider will only produce them once or twice, and the natural oscillations are slower. The motion is circular and very rapid, so that the outline of the spider disappears and a blurred appearance three or four times as large as the spider is produced.

This habit is probably protective. Birds would be puzzled rather than frightened, and would find it difficult to make a good shot at the spider. The species of spider is fairly common in gardens and hedges, and is abundant in parts of Norway. It is dark, with a few light spots.

A. S. E.

Newton's Rings.

WHILE arranging some experiments on the interference of light for class illustration at the Working Men's College, Melbourne, with a friend, Mr. Wilfred Kernot, of this city, we came across a method of showing Newton's Rings which I have not seen described, and which may be new to some of your readers, though probably any who have had to arrange the experiments for themselves will have come across it.

The apparatus used was a pair of glass plates, $2\frac{1}{2}$ inches square by $\frac{1}{16}$ inch thick, squeezed by a pair of clamps at the centres of a pair of opposite edges. A beam from an electric lamp (900 candle-power) was sent through the plates so as to be partly reflected and partly transmitted, and the images formed by these two beams were received on a pair of screens about 5 feet from the plates. Holding the plates at an angle of about 10° with the incident beam, the complementary colours are shown with great brilliancy on the screens; by varying the in-